

Work Order ID 138439-1

Tuesday, October 27, 2015 11:28:27 AM

138439

Page 1

Item ID: D2573

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Saddle, Aft, Out

Start Date: 10/26/2015 Start Qty: 8.00

8

Cust Item ID:

Required Date: 10/26/2015 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals: Process Plan: MLJ Date: OCT 29 2015

Tooling:

Date:

Run Start *NR1*

QC: Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2573	F

100

0.00

100

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.05

HAAS CNC vertical machine #1

Program Batch No. 138439

Double check by:

45
9-89 2016-01-13

1-Machine Step No 1 per Folio FA051 and inspect per attached Dimension Sheets

2-Machine Step No 2 per Folio FA051 and inspect per attached Dimension Sheets

3-Machine Step No 3 per Folio FA051 and insp

6 Ø

DAS
44
9-89

16/01/13

110

0.00

110

CONVENTIONAL MILLING MACHINE

Mill Conv

Memo

0.01

Conventional Milling Machine

Machine keyway as per dwg D2573 & D2574

6 Ø

DAS
44
9-89

16/01/13

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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OTHER : _____																																																																							

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Page 2

Stop *NR2*

Insp.
Stamp

Quality Control

DAS
44
9-85

16/01/13

0.00

Quality Control

DAS
14
8-89

0.01

Hand Finishing

Let f be a function

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
2AG 24 11.11									

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____					
Misidentified ☐	Past Due ☐						

Work Order ID 138439

Tuesday, October 27, 2015 11:28:27 AM

138439

Page 3

Item ID: D2573 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Saddle, Aft, Out
 Start Date: 10/26/2015 Start Qty: 8.00 ***g*** Cust Item ID:
 Required Date: 10/26/2015 Req'd Qty: 8.00 ***g*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
150	<i>M 13374.</i>					<i>6</i>	<i>φ</i>	<i>16-01-14.</i>	<i>233</i>
Powdercoat	Memo	0.00							
Powder Coating	START TIME: <i>3:45</i>								
	OVEN TEMPERATURE: <i>300</i>								
	FINISH TIME: <i>4:15</i>								
160	QC3- Inspect Part Finish	0.00							
160									
QC	Memo	0.00							
Quality Control									
									<i>DAS 38 9-89</i> JAN 15 2016
170	Identify as per dwg & Stock Location: <i>SI 397</i>	0.00							
170									
Packaging	Memo	0.00							
Packaging									
									<i>b</i> JAN 15 2016 <i>DAS 6 9-89</i>

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (Q51042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
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Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
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Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								

Work Order ID 138439

Tuesday, October 27, 2015 11:28:27 AM

138439

Page 4

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Item Name: Saddle, Aft, Out
Start Date: 10/26/2015 Start Qty: 8.00 ***8*** Cust Item ID:
Required Date: 10/26/2015 Req'd Qty: 8.00 ***8*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	QC21 - Final Inspection - Work Order Release	0.00							
180									
QC	Memo	0.01							
Quality Control									

MLJ JAN 15 2016

16-1-15

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
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Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
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LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

Tuesday, October 27, 2015 11:28:27 AM

Page 1

Work Order ID: 138439

138439

Parent Item: D2573

D2573

Parent Item Name: Saddle, Aft, Out

Start Date: 10/26/2015

Required Date: 10/26/2015

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP: 1 As Per RevE 06-01-27 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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D6101-007		Manufactured	No			100	Each	84.0000	1	8			
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D6101-007

Saddle Billet

**

DAS
44
9-99

16/01/13

Location

Loc Qty

Loc Code

MAT041

54

134678

14

136766

40

MAT043

30

135939

30

138056

→ 5

136766

→ 11

DQA: _____ Date: _____



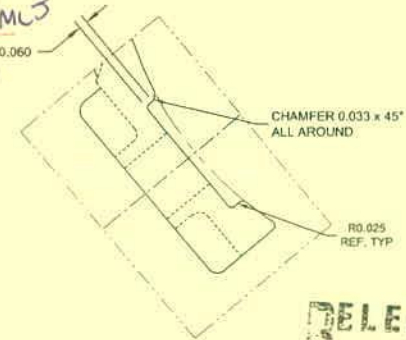
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

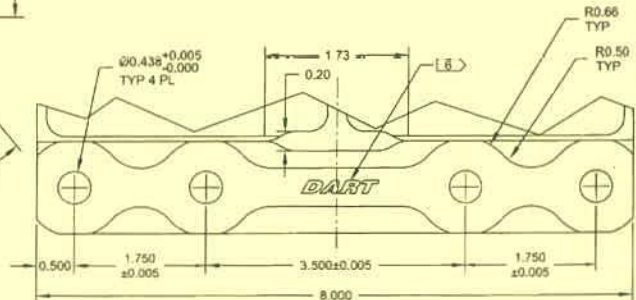
Work Order update only ☐

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Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																																				
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																																				
Large Fab ☐	Composite ☐	Supplier ☐																																																																					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																																
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2013-01-07
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VIEW B-B 85-

F	D6101-007 WAS D6102-001 REF NGR12-1532	SFM	12.11.13
E	ADD CHAMFER ON RIDGE, NOTE 5	PH	05.07.13
D	ADD RIDGES; TIGHTEN TOLERANCES	CP	02.09.06
C	INCPOR. DEC 9123/9079/9120 ADD DIMENSIONS PER TSR A1177	CP	99.10.22
B	ADD GRAIN DIR., 0.438 WAS 0.425	CW	96.12.02
A	NEW ISSUE	BW	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SFM		
CHECKED		DRAWING NO. D2573	REV.F SHEET 1 OF 1
MFG. APPR.		TITLE	SCALE
APPROVED		OUTER AFT SADDLE	NTS
DE APPR.			
DATE	12.11.13	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENTARY AND CONTAINED HEREIN IS SUPPLIED TO THE EXTENT CONSIDERED THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT PERMISSION FROM DART AEROSPACE LTD	

DART AEROSPACE LTD	Work Order: 138439
Description: Saddle, Aft Outboard	Part Number: D2573
Inspection Dwg: D2573 Rev. F	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2573 Rev. E and record below:

				Recorded Actual Dimensions				By	Date
Dim	Min	Max	Go/No Go Gauge	1	2	3	4		
A	0.438	0.443		.438	.438	.438	.438		
B	1.745	1.755		1.750	1.750	1.750	1.750		
C	3.495	3.505		3.500	3.500	3.500	3.500		
D	1.745	1.755		1.750	1.750	1.750	1.750		
E	7.990	8.010		8.000	8.000	8.000	8.000		
F	0.490	0.510		.500	.500	.500	.500		
G	0.257	0.262		.258	.258	.258	.258		
H	0.375	0.380		.375	.375	.375	.375		
I	0.490	0.510		.504	.504	.505	.505		
J	1.174	1.184		1.179	1.179	1.179	1.179		
K	0.558	0.578		.571	.571	.572	.572		
L	1.174	1.184		1.179	1.179	1.179	1.179		
M	1.365	1.375		1.370	1.370	1.370	1.370		
N	2.495	2.505		2.500	2.500	2.500	2.500		
O	4.119	4.129		4.124	4.124	4.124	4.124		
P	0.115	0.135		.130	.130	.130	.130		
Q	0.115	0.135		.127	.125	.124	.125		
R	0.240	0.260		.250	.249	.248	.248		
S	0.115	0.135		.124	.124	.124	.126		
T	0.178	0.198		.188	.188	.188	.188		
U	3.210	3.250		3.230	3.230	3.230	3.230		
V	0.230	0.250		.237	.239	.238	.238		
W	0.115	0.135		.123	.121	.120	.121		
X	0.308	0.313		.311	.311	.311	.311		
Y	0.760	0.765		.760	.760	.760	.760		
Z	0.352	0.372		.364	.364	.364	.364		
AA	0.470	0.530		.500	.500	.500	.500		
AB	0.615	0.635		.624	.625	.625	.625		
AC	0.053	0.073		.063	.063	.063	.063		
AD	0.240	0.260		.247	.249	.248	.248		
AE	1.500	1.520		1.5145	1.513	1.5125	1.5125		
AF	0.115	0.135		.125	.125	.125	.125		
AG	0.240	0.280		.260	.260	.260	.260		
AH	0.240	0.260		.247	.246	.245	.246		
AI	2.000	2.020		2.005	2.003	2.0025	2.003		
AJ	0.023	0.043		.033	.033	.033	.033		

Accept/Reject

DAS

Measured by: 44
Date: 9-89 16/01/13

Audited by: 14
Date: 9-89 16/01/14

Rev	Date	Change	Revised by	Approved
B	02.09.26	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	
F	13.03.07	Dwg Rev updated	KJ	

DART AEROSPACE LTD	Work Order: 138435
Description: Saddle, Aft Outboard	Part Number: D2573
Inspection Dwg: D2573 Rev. F	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2573 Rev. E and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				5	6	7	8		
A	0.438	0.443		.438	.438				
B	1.745	1.755		1.750	1.750				
C	3.495	3.505		3.500	3.500				
D	1.745	1.755		1.750	1.750				
E	7.990	8.010		8.000	8.000				
F	0.490	0.510		.500	.499				
G	0.257	0.262		.259	.258				
H	0.375	0.380		.375	.375				
I	0.490	0.510		.505	.505				
J	1.174	1.184		1.179	1.179				
K	0.558	0.578		.572	.572				
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M	1.365	1.375		1.370	1.370				
N	2.495	2.505		2.500	2.500				
O	4.119	4.129		4.124	4.124				
P	0.115	0.135		.130	.130				
Q	0.115	0.135		.125	.125				
R	0.240	0.260		.249	.248				
S	0.115	0.135		.125	.125				
T	0.178	0.198		.188	.188				
U	3.210	3.250		3.230	3.230				
V	0.230	0.250		.238	.240				
W	0.115	0.135		.121	.123				
X	0.308	0.313		.311	.311				
Y	0.760	0.765		.760	.760				
Z	0.352	0.372		.365	.364				
AA	0.470	0.530		.500	.500				
AB	0.615	0.635		.625	.625				
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AD	0.240	0.260		.248	.250				
AE	1.500	1.520		1.5135	1.513				
AF	0.115	0.135		.125	.125				
AG	0.240	0.280		.260	.260				
AH	0.240	0.260		.245	.246				
AI	2.000	2.020		2.004	2.0035				
AJ	0.023	0.043		.033	.033				

Accept/Reject

DAS

Measured by:	44
Date:	9-89 16/01/14

Audited by:	14
Date:	9-89 16/01/14

Rev	Date	Change	Revised by	Approved
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